DEPARTMENT OF THE AIR FORCE **MAD-004**
OGDEN AIR LOGISTICS CENTER (AFMC) **14 Nov 2002**
Industrial Support Services
OO-ALC/MAD
Hill Air Force Base, Utah 84056 **CONFINED SPACE MASTER ENTRY PLAN**

This Master Entry Plan (MEP) covers procedures for members of the Confined Space Entry Team from the Aircraft Landing Gear Maintenance Shop (MADPML) to enter the ARGON PIT, OVENs or TANKS to perform preventative maintenance or repair of Furnace Pit, PM 007415 and Furnace #12, F14, PM 000265 or tanks.

1. Location: The **Argon Pit** is located under the heat treat ovens 0007415 and 000265 in the Heat Treat Shop in the South end of Building 507.

2. Description of Workplace: The **Pit** is located under heat treat ovens in the Heat Treat Shop, Bldg 507, south end. The pit is composed of a cement structure 20 feet wide by 20 feet long and is 8 feet deep. A heavy steel mesh grid material covers the top of the entire pit. Access to the pit is gained by removing a 4 feet by 4 feet section of cover, made of the same material and then crawling down a fixed steel ladder into the cement pit. The two electric ovens located in the pit are 12 feet high; one is 5 feet wide, the other is 8 feet wide. There are two cylinder shaped dip tanks that sit in the pit, which are 3 feet, 6 inches wide and 12 feet high. They extend from the base of the pit to 3 feet above grid-surface floor level. One tank is filled with unheated Park Triple A Quench Oil and one with unheated water. All of the above equipment is part of the heat treat process. The floor of the pit tends to be damp. MADPML maintenance personnel enter the pit, ovens or tanks to perform periodic maintenance or repair on this equipment.

3. Tasks/Operations to be Performed: The following tasks will be accomplished in accordance with job plans and work control documents for preventative maintenance or repair of ovens:

PM 007415:

Every 30 days the following will be accomplished:

. Check all electrical components and power terminals for tightness, cleanliness and loose or frayed wiring, proper ground and any sign of potential failure or safety hazard.

Every 90/180 days the following will be accomplished:

. Check all electrical components and power terminals for tightness, cleanliness and loose or frayed wiring, proper ground and any sign of potential failure or safety hazard.
. Check motor for cleanliness, overheating, bad bearings, excessive wear, excessive vibration and any other sign of potential trouble or motor failure. Clean and repair as necessary. Lube as applicable with P-64.

. Clean all V-Belts for wear and slippage. Align and replace as necessary.
. Lubricate thermo high temperature fan bearings.
. Check heating elements for visible signs of deterioration. Replace as necessary (oven entry required)
. Check insulation and patch any cracked or torn spots (oven entry required).

Every 360 days the following will be accomplished:

Same as 90/180 day maintenance plus:

. Lubricate shaft and body bearing on (eclipse) manual, reset shut-off valves series 200 LT P-64.
. Lubricate all working parts.
. Check all plumbing, connections, hoses, valves, etc., for leaking or physical damage and repair as necessary.

PM 000265:

Every 90 days the following will be accomplished:
. Check V-Belts for wear, tension and proper working condition. Adjust or replace as necessary. Belts: (P/N AX53) 2 each.

Every 180 days the following will be accomplished:

. Check V-Belts for wear, tension and proper working condition. Adjust or replace as necessary. Belts: (P/N: AX53) 2 each
. Check sump pump for proper operation
. Check all electrical components for cleanliness, loose or frayed wiring, proper ground and any signs of potential trouble or safety hazards.
. Check motors for cleanliness, overheating, bad bearings and excessive wear. Clean/repair as necessary. Lube if applicable.

TANKS: Repair leaks when required

4. Chemicals Used:

Name	MSDS	OEL/PPE
P-64	14959	Potential LEL less than 10%/Eye Protection, skin protection required

5. Technical Data Required: AFOSH STD 91-25**,** *Confined Spaces;* AFMC 21-127, *Depot Maintenance Plant Management;* Manufacturer's Tech Data; the MSDS and the current Bioenvironmental Engineering Survey for PEG 507C3.

6. Prevention of Unauthorized Entry: The confined space is labeled CONFINED SPACE – ENTRY BY PERMIT ONLY. Attendant will monitor entry point.

7. Potential Hazards:

7.1 Potential Hazard Description: Area entered is under ovens that use argon in the process of heat-treating steel parts
. Any leak will cause oxygen depletion.
. There is a potential of electrical shock when electrical motors are inspected.
. There is entanglement hazard when belts are inspected or changed on electrical motors.

7.2. Control of Hazards: All hazards are controlled with methods consistent in the current Bio Survey; MSDSs on all products approved for use in this confined space.
Lockout tag out requirements will be complied with to eliminate all potential for electrical shock, entrapment and hazardous atmospheres in the confined space. Atmospheric conditions will be monitored and PPE will be worn during confined space entry.

8. Entry Procedures:

8. 1. Entry Permit Requirement – An AF Form 1024, Confined Space Entry Permit, is required for all entries. Permit will not be issued until confined space meets requirements and acceptable entry conditions specified in paragraphs 8.2 and 8.3 are met.

8.2. Engineering Controls and Isolation Methods (Lockout/Tagout):
Lockout/Tagout procedures will be followed to lockout Electricity, Air, Gas, Ithodermic Gas and Argon and for PM 007415 and PM 000265 in accordance with the OO-ALC Form 215 attached to the applicable Furnace in the Heat Treat Shop prior to entering the Aragon Pit or oven to perform maintenance or repair.

PM 007415:
. ELECTRICAL: - E1 is located approx 5 feet above the floor south of Control Panel, knife switch down. Place lockout padlock and tag through switch.
. AIR – A1 is located at grate level of furnace. Close ball valve, lock and tag it out.
. GAS & ITHODERMIC GAS & ARGON – G1, IDG1, and AR1 are located approx 6 feet above floor, 19 feet from Soth wall, east of control panel. Turn ball handles clockwise, lock and tag them out.

PM 000265:
. ELECTRICAL – E1 is located approx 6 feet above floor on left side of Control Panel, trip switch down. Place lockout padlock and tag through switch.

8.3. Acceptable Entry Conditions:

- **.** All lockout/tagout procedures must be complied with.
- **.** Authorized attendant must be present.

. Oxygen levels must not be not less than 19.5% not greater than 23.5% in the confined space.
. The confined space LEL must be less than 10% .
. Fresh air ventilization will be maintained throughout confined space entry.
. Availability of Fire Department Emergency Rescue Services confirmed by calling 7-3021.
. Permit is signed by all members of the Confined Space Team and posted before work begins in the confined space.

9. Authorization:

9.1. Confined Space Entry Team: Will consist of trained and authorized personnel from the Landing Gear Support Shop/MADPML. (See Authorized Entry Supervisor Listing, attachment 2.) The team will consist of four people: The entry supervisor, the entrant, the attendant and a runner.

9.1.1. Entry Supervisor: Note: Attachment 1 for Authorization List.
. Maintains a copy of this MEP.
. Responsible for isolation of the area, the assigning of tasks, briefing the team before entry.
. Insures acceptable entry conditions listed in paragraph 8.2 and 8.3 are complied with.
. Authorizes the confined space entry permit.
. Ensures personnel who are ill or on medication that may affect their ability to safely perform assigned tasks are excused from the operation.
. Ensures emergency rescue personnel are available.
. Ensures the entry permit is complete, dated and signed prior to the entry and cancels the permit if conditions are no longer acceptable..
. Entry Supervisor will act in accordance with all other duties outlined in AFOSH STD 91-25, para 2.13.

9.1.2 Attendant:
. Responsible for monitoring the entry area and maintaining effective communication with the entrant(s).
. Must be able to summon help in case of an emergency.
. Limit entry only to those authorized.
. In the event of an emergency, order the evacuation of the confined space and sends a runner to notify emergency response personnel.
. Remain at the attendant's post and not leave for any reason except self-preservation unless replaced by a trained equally qualified person.

Note: The attendant may assist the entrant in self-rescue only when assistance can be rendered without his/her body breaking the plane of the confined space entry.

9.1.3. Entrant:
. Understands task to be performed.
. Reviews the permit before entry, complying with entry procedures, ensures acceptable conditions exist, wears PPE, alerts attendant of changes in condition.

. Responds immediately to the attendant's evacuation orders.

9.1.4. Runner:
. Notifies emergency rescue services by calling 911 via base telephone or 777-1911 via cell phone when alerted to do so by the attendant.
. Assists in non-entry rescue.

10. Training: The confined space entry team entry supervisor, attendant, entrant, and runner must have the following training: MAWH Confined Space Course 0523, Annual Site Specific Training, Confined Space Awareness Training and Atmospheric Tester Training. All training shall be documented on individual's AF Form 55, Employee Safety and Health Record.

11. Entry Equipment and PPE:

. Atmospheric Testing Equipment.
. Blower for fresh air ventilation.
. PPE includes non-static, non-spark producing button coveralls, nitrile gloves, safety glasses, safety shoes.

12. Testing: Atmospheres in confined space will be tested and documented by the confined space entry team. Oxygen levels will be tested first. Oxygen levels and must be between 19.5% and 23.5% followed by tests for LEL content which will be maintained at 10% or less. Testing will be performed with the fresh air ventilation off and with it turned on. An Eagle Tester will be used to check and monitor atmospheres and must be calibrated.

13. Communication and Observation: The attendant will stand directly outside the confined space opening and verbally communicate with the entrant. The attendant will notify a runner to make emergency calls. The attendant cannot leave the confined space unless he/she is relieved by a trained and qualified attendant or for self preservation. See paragraph 10. Note: Cell phone use to notify emergency rescue is limited to areas that do not have a potential for an explosive/flammable atmosphere.

14. Rescue: The 75ABW/CEF provides rescue support for all confined space entries. The attendant will notify rescue personnel by dispatching a runner to notify emergency rescue services by calling 911 at the nearest base phone or 777-1911 via cell phone. The nearest base phone must be determined before entry and listed on the entry permit.

15. Contractor Interface: Contractors must be informed that work is to be performed in a permit required confined space. Insure information is included in the statement of work. The entry supervisor must coordinate with the contractor on any existing permits and inform the contractor of potential hazardous conditions within the area to be entered. The contractor will immediately inform the owner of the confined space and the entry supervisor of hazards detected in the confined space, when work in the confined space has been terminated before completion and when the work has been completed. The contractor must briefed on the contents of the AFOSH STD 91-25, Chapter 7.

16. Permit Routing and Control: Permit will be kept on file in the MADPML shop for one year with a copy being forwarded to MAD Safety.

17. Amendment to the MEP: The MEP must be reviewed at least once a year by the entry supervisor and coordinated by Confined Space Program Team (CSPT) consisting of Bio-environmental Engineering /SGPB, Fire Department/CEF and Base Safety/SEG. Changes at any time to the MEP other than spelling and grammar will void the use of this MEP, require the termination of the confined space entry and must be brought to the attention of entry supervisor, organizational safety office and the CSPT.

18. Coordination: (MAD-004)

OO-ALC/MADPML Entry Supervisor	**Date**
OO-ALC/MADPML Entry Supervisor	**Date**
OO-ALC/MANLSWP Supervisor	**Date**
OO-ALC/MADP	**Date**
OO-ALC/MAN Safety	**Date**
OO-ALC/MAD Safety	**Date**
OO-ALC/SGPB	**Date**
75 CES/CEF	**Date**
OO-ALC/SEG	**Date**

CONFINED SPACE MASTER ENTRY PLAN MAD-004
ATTACHMENT 1

Confined Space Entry Supervisor Authorization

The following personnel assigned to the Aircraft Landing Gear Maintenance Shop (MADPML) are authorized to approve and sign confined space entry permits for work to be performed in the Argon Pit, ovens, or tanks on Furnace Pit, PM 007415 and Furnace #12, F-14, PM 000265 or tanks.

NAME	OFFICE	PRIMARY/ALTERNATE
James J. Steed	MADPML	Primary
Glen Anderson	MADPML	Primary